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THE
THOMSON-HOUSTON
ELECTRIC COMPANY

PROPRIETORS OF THE

THOMSON-HOUSTON SYSTEM

OF

ELECTRIC LIGHTING.

MANUFACTURERS OF

Dynamo-Electric Machines, Electric Motors, Electric
Arc-Lamps, Incandescent Lamps, Current Regu-
lators, Current Distributors, Lightning
Arresters, Cut-Outs, Switch-Boards,
Etc., Etc.

DEALERS IN

ELECTRICAL APPARATUS.

PRINCIPAL BUSINESS OFFICE :

131 DEVONSHIRE STREET,

BOSTON, MASS.

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Pamphlet #13

PRICES OF MACHINES

WITH PATENT AIR-BLAST TO PREVENT FLASHING.

Machine Letter.	Number of Lights of 2,000 Candle-power per Light.	Price of Dynamo.	Weight of Dynamo.	Diameter of Pulley in Inches.	Width of Pulley.	Revolutions Per Minute.	Horse-power Consumed.	Floor space taken by Machine. Length is parallel with shaft.
B	2	\$400	500	8	4	900	2	22 x 30 in.
C	3	550	600	8	4	1,250	3	22 x 30 "
D	4	700	1,000	10	5	850	4	34 x 40 "
E	6	1,000	1,200	10	5	1,000	5	34 x 40 "
G	10	1,400	2,000	12	6	875	8	42 x 50 "
H	12	1,500	2,200	12	6	950	9	42 x 50 "
J	16	2,000	3,000	15	7	800	12	46 x 56 "
K	20	2,200	3,300	15	7	850	15	46 x 56 "
L	25	2,600	3,800	15	8	850	19	52 x 64 "
M	30	3,000	4,000	15	8	875	22	52 x 64 "

Electric Lamps, single, ... \$65.00 each.
 Electric Lamps, ornamental, ... 75.00 "
 Electric Lamps, double, for all night, ... 80.00 "
 Focussing Lamp, for projections, ... 75.00 "
 Focussing Lamp, with headlight reflector complete, ... 140.00 "
 Patent Automatic Regulator and Controller Attachment, allowing extinguishment or relighting of Lamps without attention to Dynamo, ... 100.00 "

THE
THOMSON-HOUSTON
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Etc., Etc.

DEALERS IN

ELECTRICAL APPARATUS.

PRINCIPAL BUSINESS OFFICE :

131 DEVONSHIRE STREET,
BOSTON, MASS.

LIBRARY of
THE
FRANKLIN
INSTITUTE

—> OFFICERS. <—

H. A. PEVEAR, PRESIDENT.

C. A. COFFIN, VICE PRESIDENT.

J. J. SKINNER, SECRETARY.

S. A. BARTON, TREAS. AND MANAGER.

ELIHU THOMSON, ELECTRICIAN.

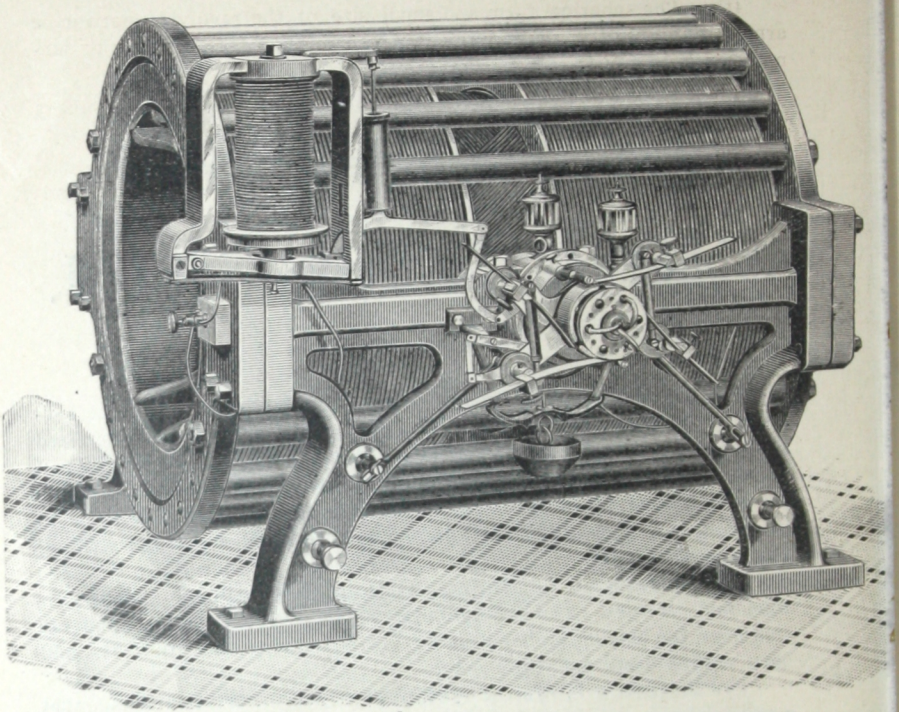
THE THOMSON-HOUSTON ELECTRIC LIGHTING SYSTEM.

The International Electrical Exhibition of 1884, held under the auspices of The Franklin Institute in Philadelphia, offers to all interested parties an opportunity to see for themselves, and make direct comparison of the different systems of electric lighting that are competing for public favor. Among these systems, the **Thomson-Houston** has come to be recognized throughout the country as possessing novel and striking features of merit.

The apparatus of the **Thomson-Houston system** is simple, durable, and efficient. The arc-lights are strong, steady, and uncommonly free from the hissing and sputtering so frequent in other arc-lights, and burn with a beautiful white color.

The **Thomson-Houston system** possesses the great advantage that **any machine** at its speed is automatically regulated to run **any number of lights**, from one up to the highest number it can support, and without introducing any resistance in place of missing lights. This renders it perfectly practicable for customers to **put out** one or more lights **at the Lamps** without changing the speed of the generator or **attending to it in any way**, and with an **economy of horse-power** and **carbons** proportionate to the number of lights extinguished. Thus a machine supplying **thirty or forty lights** in its circuit may have them **all put out but one**, while the speed is the same, but the **horse-power** is reduced as the lights are extinguished. This variability is **not possessed** by any **other system** in use, and is a peculiarity of the simple automatic regulating apparatus and generators of the **Thomson-Houston system**.

The **Thomson-Houston Electric Co.** is now supplying several kinds of arc-lamps, of illuminating power to suit very diverse needs, and of various styles and patterns. It will supply at short notice, dynamo machines running any number of arc-lights, from **one to fifty**. It will also be ready this season to furnish **incandescent lamps** to run from the **same circuit with arc-lamps**.



DYNAMO-ELECTRIC MACHINE, WITH THOMSON'S SPHERICAL ARMATURE.

The **DYNAMO-MACHINE** of the present system, illustrated above, embodies joint improvements patented by Elihu Thomson and Edwin J. Houston, and improvements patented by Elihu Thomson. We call especial attention to the following merits:—

1st. Extreme simplicity, there being only three coils of wire on the revolving portion, or armature, and three pieces of copper in the commutator.

2d. The complete enclosure of the armature by the coils and magnets of the machine, concentrating the power where it should be applied to produce the best results, and preventing injury to the moving parts, or danger to the machine from iron objects being drawn into it.

3d. The highest efficiency, due to the enclosure of all the wire of the armature where the electricity is generated, by a most powerful magnetic field, giving great saving in horse-power to produce a given result.

4th. The spherical form and small size of the revolving portion or armature, giving the least possible air-resistance, or loss of power by fanning air.

5th. The form and size of the armature, preventing the possibility of injury due to centrifugal force.

6th. The compact and encased condition of the parts, such as insulated wire, rendering them not subject to injury by contact with surrounding objects.

7th. The continuous character of the current and its consequent advantages.

8th. The machine possesses the simplest commutator in the world giving continuous currents; and from its construction there is no danger of injury to its insulation, so often the cause of putting the generators of other systems out of service. With the air-blast attachment oil may be freely used on the commutator, and the wear of its segments and of the brushes then amounts to almost nothing.

9th. The generator requires less attention to keep in order than any other, and with the automatic regulator attached its power is adapted to the number of lights it is desired to maintain.

10th. There is little noise or hum produced during running, so often an objectionable feature of other generators.

11th. The wearing in the boxes is reduced to a minimum by the lightness and balance of the revolving parts.

12th. The thoroughness of insulation of all its parts, where needed.

13th. The replaceability and interchangeability of its important parts.

14th. The freedom from risk of short circuits; the potentials being so distributed as to secure this result.

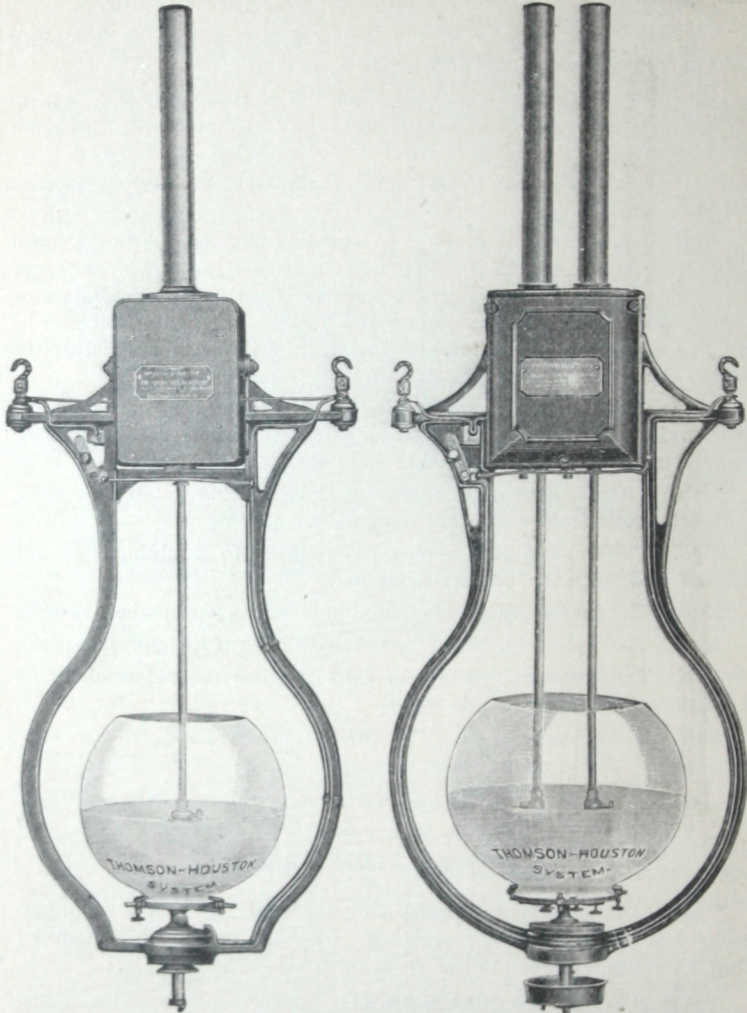
ELECTRIC ARC-LAMPS.

The following styles and patterns of arc-lamps, each adapted to particular uses or locations, are provided. They are covered by patents of Elihu Thomson, assigned to the Thomson-Houston Electric Co.:

THE THOMSON STANDARD LAMP, for factories, mills, foundries, depots, freight-yards, streets, etc., etc.

THE STANDARD DOUBLE LAMP, for all-night use.

These lamps are of plain, yet neat and substantial design, and do not need readjustment after leaving the factory.

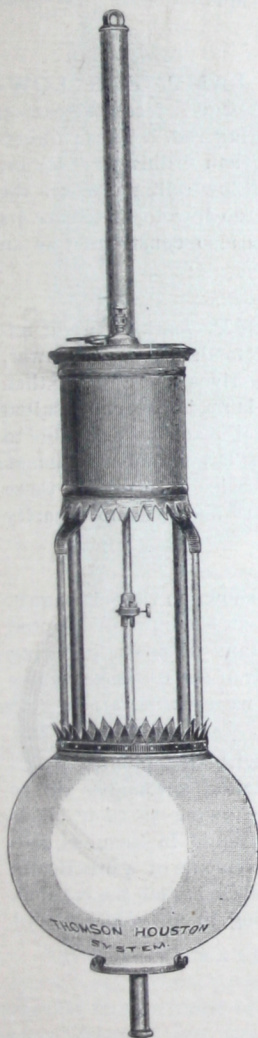


STANDARD LAMP.

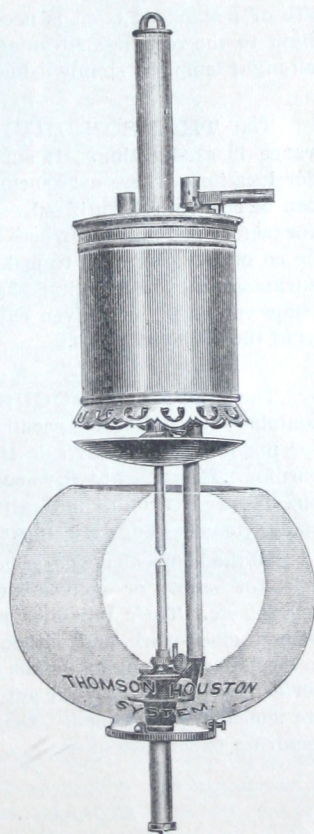
DOUBLE LAMP.

Lamps, when used in situations where they are liable to be exposed to the weather, are provided with protecting hoods above them.

THE ORNAMENTAL LAMP, illustrated on this page, makes a handsome source of light for offices, fine stores, dining-halls, lecture-halls, churches, etc. These are furnished double as well as single.



ORNAMENTAL LAMP.



CARBON-FEED LAMP.

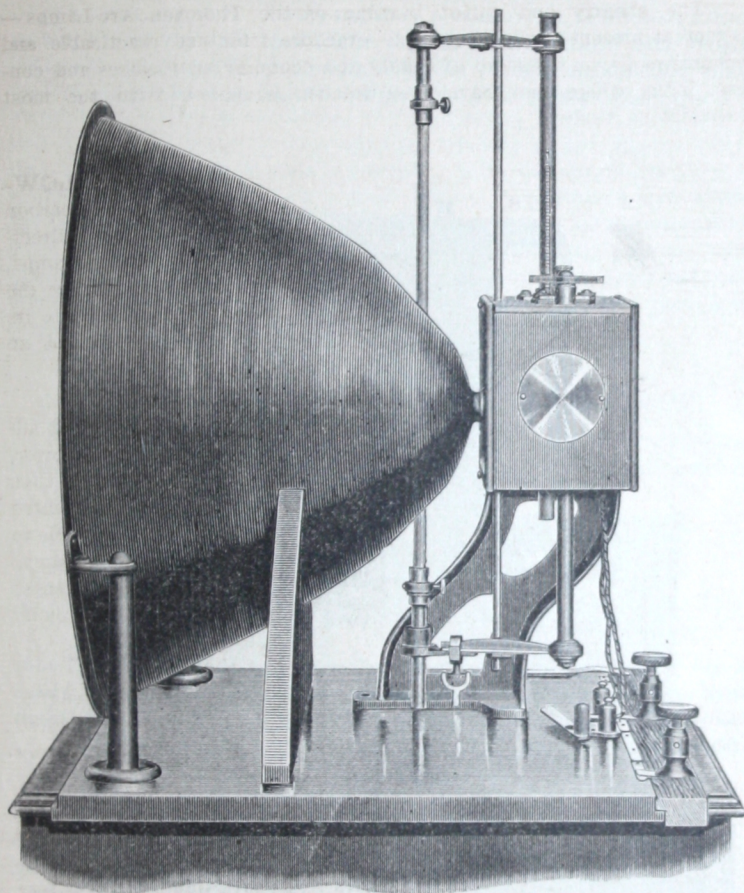
The **steady** and **quiet** burning of the Thomson Arc-Lamps—a fact at present well recognized—renders their use practicable and advantageous, on the score of beauty and economy, in theatres and concert halls, where they have been frequently applied with the most satisfactory results.

THE THOMSON CARBON-FEED LAMP, FOR LOW-STUDDED ROOMS. This lamp, shown on page 7, feeds the carbon direct, without the aid of the common supporting rod. These direct-feeding lamps occupy much less vertical space than ordinary arc-lamps, and are specially suited for use in rooms with low ceilings, where the arc of a standard lamp is necessarily brought too low to distribute its light to the very best advantage. This lamp is also constructed as an all-night lamp, by simply using longer carbons.

The **THOMSON DIVIDED ARC-LAMP**, marks a great advance in arc-lighting. It supplies a light of moderate candle-power, for locations where a 2000-candle power lamp gives more light than can be economically utilized. This divided arc-lamp is especially suited for factory and mill use, where looms and other tall machines are liable to be so closely placed as to make a comparatively large number of lamps advantageous for avoiding shadows. Nearly twice as many of these lamps can be lit by a given expenditure of power and dynamo capacity as of the standard lamps.

The **THOMSON FOCUSSING LAMP**, shown in the cut, page 9, contains several features peculiar to it, by which it is admirably adapted for maintaining the **arc** or **light-focus** constant in position during burning. **Headlights for steamers**, consisting of our focussing lamps and proper reflectors and attachments which we provide, are in constant demand. They are substantial and reliable.

All the lamps above described are furnished with all appliances desirable for safety or convenience, such as switches, automatic safety devices, etc. Their reliability and constancy are owing to their being without clock-work, and without dash-pots with liquid in them, as also to the care and study of details given to the requirements of a practically perfect arc-light. They are automatically extinguished when the carbons are sufficiently consumed. They are self-adjusting in all respects, not requiring expert attention.

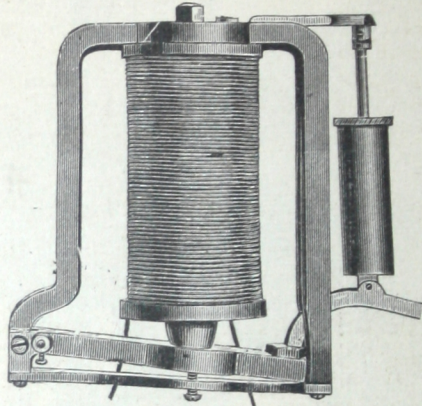


FOCUSSING LAMP.

THE AUTOMATIC CURRENT REGULATOR.

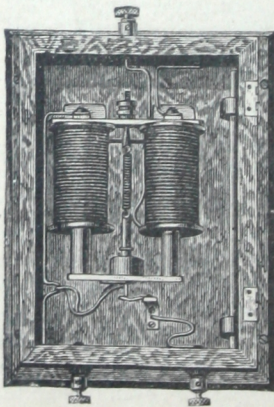
THE AUTOMATIC REGULATOR shown on page 10, is an attachment of simple construction which is secured to the machine and **adjusts the current** to a standard amount, regardless of the number of lamps being at any time used. It serves also to **compensate for changes in the speed of the generator** due to unsteady power, so that the lights may be retained steady and of normal size, even though the

motive power does not furnish a constant speed. It serves further to so **adjust the commutator of the machine**, that any injury due to faulty adjustments made by unskilled attendants, is completely obviated. It is especially valuable as a safeguard to the machine and lamps in case



AUTOMATIC REGULATOR.

of any accident to the wires or short circuiting of the machine, and adds much to the security against fire. By its use the lines are supplied with a standard current, and lights may be interchanged from circuit to circuit without readjustment.



CONTROLLER-MAGNET.

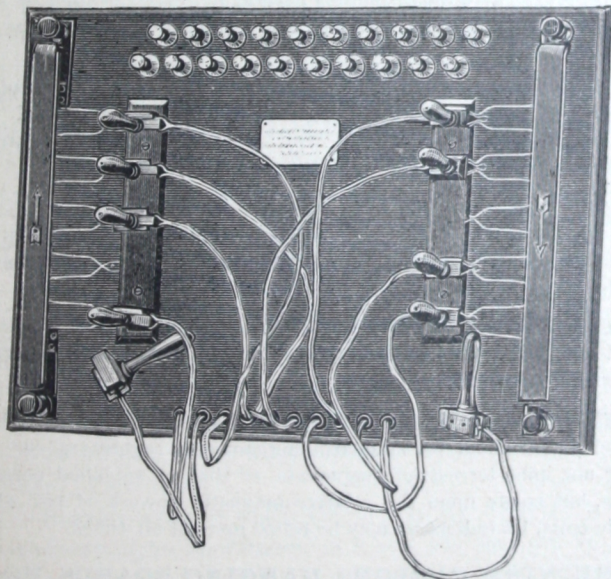
The current regulator consists essentially of a delicate contact controlling magnet placed in the line or main circuit, governing the action of a second electromagnet which moves the commutator brushes to positions of practically constant current. The operation is very simple, without complexity or uncertainty. In these respects it is unlike similar devices appearing in other systems, at recent dates, notwithstanding that such regulators are covered by the Thomson-Houston Patents.

THE AIR-BLAST SPARK-CONTROLLER.

By an invention of the greatest value, protected by bottom patents, Prof. Thomson has provided a complete solution of the problem of controlling the sparking or flashing liable to be so troublesome at the commutators of all dynamo-machines. This invention consists in forcing a thin and forcible jet of air square against the ends of the brushes where they bear on the commutator segments. With this attachment there is no difficulty in taking off from a single narrow commutator a high potential current for sixty or more lights in one circuit, and its use permits oil to be applied with great freedom to the commutator, thus almost completely **doing away with the wearing out** of the brushes and commutator. With this improvement on a machine the brushes have been known to endure nearly three months' use without trimming.

THOMSON PATENT DISTRIBUTION SWITCH.

This valuable appliance enables the lights in a mill to be controlled from a central point so as to allow groups of lights to be extinguished



DISTRIBUTION SWITCH.

and relighted at will, or exchanged from the circuit of one generator to that of another, without disturbing the circuit wires. The switch is

placed near the generators, and is conveniently given in charge of the attendant. Should the basement of a mill require to be lighted at an earlier hour than other portions of the mill, the attendant adjusts his switch accordingly, and may add the other lights at any subsequent time. In like manner should it be desired to extinguish a group of lights in a certain room at any given hour, the attendant can do so at his switch without inconvenience. Many applications under varied conditions will suggest themselves. The current is **absolutely cut off** from the lights, and line-wire thrown out of use by the use of the switch. On street circuits, worked by lighting companies, it is modified to enable lights in any building to be absolutely cut off, so that the unused wires are "dead" wires for the time being, thus completely fulfilling the requirements of the board of underwriters. The advantages of the switch have been fully tested by long practical use. This switch is also constructed, when needed, to admit of the **sudden transfer** of a circuit of lights, more or less in number, from the circuit of one machine or set of machines to another circuit of machines and lamps while running, and without disturbing the operation or even momentarily extinguishing any of the lamps.

We also are prepared to supply several approved designs of central station switch-boards of 50, 100, 150, and 200 lights capacity, or over.

LIGHTNING ARRESTERS. For local lighting companies, protection is sometimes necessary against danger from lightning. Such protection is afforded in a novel way by Thomson's new **Lightning Arrester**, a simple and effective device.

CUT-OUTS. We make an improved and simple form of cut-out for use at points where line-wires enter buildings. This cut-out works without spark, and with perfect safety while its insulating surfaces are ample in extent.

GALVANOMETERS. We also make galvanometers for the use of local companies, and experts in measuring and testing the current from dynamo machines.

THE THOMSON-RICE INVARIABLE AMMETER is a very useful instrument for standardizing currents, regulators, etc. Depending not upon terrestrial magnetism, or that of so-called permanent magnets, but solely upon the relative magnetic powers of two electro-magnetic coils, its indicators may be relied upon at all times.

LINE WIRE, CARBONS, HANGING BOARDS, HOODS, INSULATORS, etc. The Thomson-Houston Electric Co. is prepared to supply local companies, and private consumers, with all kinds of electrical supplies used in the installation and maintenance of electric lighting plants.

INCANDESCENT LIGHTING.

Arrangements are nearly perfected for the supply of the Incandescent Lamps of Prof. Thomson, in which a very high vacuum is made by new apparatus of his invention, capable of working with ease and rapidity.

THE INCANDESCENT DISTRIBUTING SYSTEM.

We have developed and are introducing a system of Incandescent Electric Lighting by which incandescent lights in groups can be successfully and economically run from the same circuit with arc-lights. Hitherto a possibility that the breakage of one or two incandescent lamps of a group might result in a further breakage and disruption of an entire circuit has prevented Lighting Companies from a general use of any such method, although some attempts have been made. Our new improvements provide perfect safeguards against any trouble from accidental breakage of a lamp or other unforeseen cause. By an automatic device in the arc-light current a group of eight incandescent lights, of twelve to sixteen candle power each, can be substituted in place of one arc-light. All the lights in any group can be used at once, or any desired number of them can be extinguished at pleasure as easily as gas lights. The device acts by electrical means, being entirely independent of clock-work, and hence affords no chance for a careless attendant to produce disaster by neglecting to wind up a mechanism. We speak of a *group* of lights, but it should be understood that the lights of the group can be scattered about at pleasure, and may be in various rooms if desired. It is also possible to have a different number of incandescents in place of one arc-light, by adapting the number to the candle power required in each lamp. Any number of groups of incandescent lights within the power of a machine can be used on one main circuit, or a part of these groups can be replaced by arc-lights.

The transfer device by which the current is distributed to a group of incandescent lights is contained in a neat box that can be placed at any convenient part of the circuit, and is known as the Thomson-Rice Incandescent Distributor, from its inventors, who have designed it with a view to fulfilling all conditions of effectiveness and safety.

INSURANCE.

The Thomson-Houston system of electric lighting has been examined by the agents of insurance companies and pronounced perfectly satisfactory in fulfilling all the requirements laid down by them, and all lines and apparatus put up by the Thomson-Houston Electric Company conform to insurance rules. The safeguards provided by this company in the way of automatic regulation of the current to meet every demand, cannot be equalled by any other company.

All our apparatus has stood the test of continued daily practical use, and it is built and tested under highly skilled superintendence.

INTERNATIONAL EXHIBITION.

We add to the apparatus already described, the following interesting features of our exhibit at the Franklin Institute Exhibition, some of which mark special advances into new fields.

DIMINUTIVE PLANT OF DYNAMOS AND LAMPS.

This exhibit was designed by Prof. Thomson, to show at a glance the relations of the parts of a working plant, and at the same time to afford interesting examples of the relations between current, electromotive force, and work. Here is shown a very small dynamo, working five or six arc-lights of approximately sixty candle power each. Eight to ten small incandescent lamps can also be run on a mixed circuit of arcs and incandescents. Visitors will find this a very interesting display.

COMBINED MOTOR AND GENERATOR. This exhibit shows a means of running incandescent lamps or other electrical devices from an arc-light or motor circuit. The motor and lighting armatures are built on the same shaft, and the current taken off may be of any desired character or potential, adapted to any use to which it is to be applied. The incandescent lights are supplied with alternating currents.

ARC-LAMPS IN MULTIPLE SERIES. It is believed that this is the first time arc-lights running in multiple series have ever been used in public. Prof. Thomson's discovery and invention for making this great desideratum an accomplished fact illustrates his genius as an electrician. By the use of this apparatus arc-lights of totally different powers may be run from a single circuit, some in series, and some in mul-

multiple arc or in multiple series. Divisions and re-divisions, as well as reunions of arc circuits, are easily practicable.

HAND DYNAMO. Physicists and lecturers in many departments of science, will welcome the appearance of a hand dynamo suitable for the laboratory and capable of working a small arc-light, or several incandescent lamps, or producing other effects often required in practical work or lectures. The machine shown is of very great power for its size and speed of running. It is also an admirable electric motor, and has delivered over one horse power.

ELECTRIC MOTORS. In the exhibit will be seen also electric motors of other sizes and designs. The electric transmission of power has for a long time been regarded by the foremost practical electricians as perfectly feasible. As a means of distributing motive power, the electric motor seems destined soon to come into extensive use. The results thus far obtained give promise of great success in the future. The Thomson-Houston Electric Co. is provided with ample facilities for building motors of various sizes to run economically upon arc-light or other circuits.

THE COMMERCIAL VALUE OF THE THOMSON-HOUSTON SYSTEM.

The features set forth in the foregoing description are nearly all peculiar to the Thomson-Houston system, and make it far and away the most desirable system of electric lighting now in the market, either for local lighting companies, or for individual users of light.

It has been demonstrated by long and exhaustive tests that the saving of attendance, repairs, and power in using the Thomson-Houston, as compared with other systems, more than equals interest charges on the entire cost of plant.

This has been in several instances freely admitted by patrons of other systems, and the admission followed by the abandonment of those systems and the substitution of the Thomson-Houston. The system is especially adapted for export to foreign countries, and any person contemplating the use of electric lighting apparatus at a distance from the source of supply, cannot afford to experiment with any other system now in use.

In a letter from Prof. Thurston, of Hoboken, to the Armington & Sims Engine Co., reporting his tests of power required in running Thomson-Houston standard arc-lights, he stated that with sixty lights running from two dynamos the power was but 7-10 horse-power per light.

From a direct comparison of the Thomson-Houston with the Weston apparatus at the Cincinnati Exposition of 1883, as to the average light in all directions measured, and the relative illuminating power per unit of energy, the jury stated that "there is a difference of **more than forty per cent in favor of the Thomson-Houston.**" [See Science, Vol. III., No. 54, p. 184.]

THE FIRST PRIZE at the Cincinnati Exposition of 1883, for the **Best System of arc-lighting** and the **Best arc-lamp**, was awarded to the Thomson-Houston Electric Company. We also were awarded the prize for **the Best arc-light** at the Southern Exposition of 1883, at Louisville, and have lately been notified that our system has received the **First Gold Medal** at the Exhibition in San Francisco.

LOCAL LIGHTING COMPANIES USING THE THOMSON-HOUSTON SYSTEM.

The following is a list of our Local Company Plants now doing a Lighting business, not including the companies started by our Philadelphia agents.

NAME.	PLACE.
Consolidated Electric Light Co.,	{ Portland and Old Orchard, Me. }
Lewiston and Auburn Electric Light Co.,	{ Lewiston and Auburn, Me. }
Merchants' Electric Light and Power Co.,	Boston, Mass.
Union Electric Light and Power Co.,	East Boston, "
Lynn Electric Lighting Co.,	Lynn, "
Salem Electric Lighting Co.,	Salem, "
Gloucester Electric Light Co.,	Gloucester, "
Worcester Electric Light Co.,	Worcester, "
Middlesex Electric Light Co.,	Lowell, "
Wachusett Electric Light Co.,	Fitchburg, "
New Bedford Electric Light Co.,	New Bedford, "
Fall River Electric Light Co.,	Fall River, "
Essex Electric Co.,	Haverhill, "
	Cottage City, "
Woonsocket Elect. Machine and Power Co..	Woonsocket, R. I.
Narragansett Electric Light Co.,	Providence, "
Pawtucket Electric Light Co.,	Pawtucket, "
Hartford Electric Light Co.,	Hartford, Conn.
New Haven Electric Light Co.,	New Haven, "
Bridgeport Electric Light Co.	Bridgeport, "
Conn. District Telegraph and Electric Co.,	Waterbury, "
Syracuse Electric Light and Power Co.,	Syracuse, N. Y.
Central N. Y. Electric Light and Power Co.,	Utica, "
	Auburn, "
Citizens' Electric Illuminating Co.,	Brooklyn, "
Municipal Electric Light Co.,	Brooklyn, "

NAME.	PLACE.
Saratoga Electric Light Co.,	Elmira, "
Champion Electric Light Co.,	Saratoga, "
Citizens' Electric Light Co.,	Springfield, Ohio.
Columbus Electric Light and Power Co.,	Akron, "
Gem City Electric Light Co.,	Columbus, "
Thomas Electric Light Co.,	Quincy, Ill.
	Ottawa, "
	La Salle, "
Pilcher Improved Electric Light Co.,	Council Bluffs, Ia.
Citizens' Electric Light Co.	Des Moines, "
	Muscatine, "
	Mendota, "
St Louis Thomson-Houston Electric Co.,	St. Louis, Mo.
St. Joseph Electric Light Co.,	St. Joseph, "
Kawsmouth Electric Light Co.,	Kansas City, "
	Duluth, Minn.
Leavenworth Coal Co.	Leavenworth, Kan.
Pacific Thomson-Houston Electric Co.,	Sacramento, Cal.

ISOLATED LIGHTING.

The following is a partial list of our Isolated Plants now running, not including those put in by our Philadelphia Company or the Canada Company, producing the same system. Many of these plants were put in on trial and accepted after severe competition with other systems also under trial :

Penobscot Chemical Fibre Co.,	West Great Works, Me.
Wentworth Hotel,	Newcastle, N. H.
Barnaby Manufacturing Co.,	Fall River, Mass.
Johnson Manufacturing Co.,	North Adams, "
Chas. Parker Co.,	Meriden, Conn.
Russell & Erwin Manuf'g. Co.,	New Britain, "
Stanley Tack Co.,	" " "
P. & F. Corbin,	" " "
Windsor Locks Steel Co.,	Windsor Locks, "
Waterbury Brass Co.,	Waterbury, "
Farist Steel Co.,	Bridgeport, "
Hartford Silk Mfg. Co.,	Tariffville, "
New Haven Wire Co.,	New Haven, "
Riggs House,	Washington, D. C.
Russell & Morgan Printing Co.,	Cincinnati, Ohio.
Litchfield Car and Machine Co.,	Litchfield, Ill.
National Hotel,	Peoria, "
Matteson House,	Chicago, "
Rush St. Bridge,	City of Chicago, "
A. L. Ide,	Springfield, "
Globe Woolen Mills,	Utica, N. Y.
Buffalo Electrical Works,	Buffalo, "
Banner Tobacco Works,	Richmond, Va.
Jacksonville Hotel Co.,	Jacksonville, Fla.
Chaffee Bros.	Etiwanda, Cal.
Steamer "Chas. Merriam"	
Steamer "Minnetonka"	
Wm. Angus,	Montreal, Canada.
J. R. Booth & Co.,	Ottawa, "

PHILADELPHIA AGENCY.

The Licensee of the Thomson-Houston Electric Company for the States of Pennsylvania, New Jersey, and Maryland, and the city of Baltimore, is the Thomson-Houston Electric Light Company, of Philadelphia. The following are some of the local Lighting Companies and more important Isolated Plant Installations of that branch of our business:

Bethlehem Electric Light Co.,	Bethlehem, Pa.
Ashland Gas Light Co.,	Ashland, Pa.
McKeesport Electric Light Co.,	McKeesport, Pa.
Germantown Electric Light Co.,	Germantown, Philadelphia.
Penncoyd Iron Works,	near Philadelphia, Pa.
Midvale Steel Works,	Nicetown, Philadelphia.
Baldwin Locomotive Works,	Philadelphia, Pa.
Delaware Rolling Mills,	Philadelphia, Pa.
W. C. Allison & Sons' Car Shop,	Philadelphia, Pa.
Phoenix Iron Company,	Phoenixville, Pa.
Edgemoor Iron Company,	Wilmington, Del.
Lackawana Iron and Steel Co.,	Scranton, Pa.
Chester Rolling Mills,	Chester, Pa.
Cambria Iron Company,	Johnstown, Pa.
Keystone Bridge Company,	Pittsburgh, Pa.
Philadelphia & Reading R. R. Company,	Reading, Pa.
Baltimore & Ohio R. R. Company,	Baltimore, Md.
Cumberland Valley R. R. Company,	Chambersburg, Pa.
American Ship Building Company,	Philadelphia, Pa.
Grand Lake Coal Company,	Pittsburgh, Pa.
Continental Brewing Company,	Philadelphia, Pa.
Firth & Foster Bros., Dyers,	Philadelphia, Pa.
P. H. Glatfelter, Paper Mill,	Spring Forge, Pa.
Ellithorpe & Co., Knitting Mills,	Philadelphia, Pa.
Jas. Doak, Jr. & Co., Worsted Mills,	Philadelphia, Pa.
A. B. Farquhar,	York, Pa.
Michael Schall,	York, Pa.
Schall & King,	Middletown, Pa.
Gilmer Manufacturing Company,	Waynesboro', Pa.
Ross & Sandford,	Baltimore, Md.
H. Leh & Co.,	Allentown, Pa.
Chas. Spencer & Co., Knitting Mills,	Germantown, Philadelphia.

LETTERS AND NOTICES.

In our pamphlet issued in the Fall of 1883, we printed some very remarkable testimonials to the high value and successful performance of the Thomson-Houston apparatus. That pamphlet can still be supplied, and we refer to that any parties who wish to read the opinion of those who are practical users of our system. We will only add here a few letters and extracts, from the many favorable notices of our correspondents, and the public press.

FARIST STEEL CO.,

BRIDGEPORT, CONN.

The Thomson-Houston Electric Co.:

Gentlemen:—In reply to yours of the 5th, inquiring something of my experience while serving on the Committee of gentlemen of this city appointed to investigate and report on the best Electric Light, I will say that after seeing the United States, the Weston, the Brush, and the Thomson-Houston Electric Lights in operation, we decided that the Thomson-Houston Light was far the best, for the following reasons:—

First—The steadiness of the light.

Second—The soft or easy light to the eye while retaining the power and brilliancy of any light seen. We believe so far as our experience goes, that it is the most economical system to run that is now used.

We are at this time putting up a new plant of your system in competition with the Brush Co.'s system, and we expect soon to have the city lighting.

Respectfully yours,

JOEL FARIST.

[Since the above was written, the city lighting in Bridgeport has been awarded to the Bridgeport Electric Light Co., using the Thomson-Houston system.]

Schleicher, Schumm & Co.,
Engineers and Builders of
"Otto" Silent Gas Engine. }

PHILADELPHIA, March 23, 1883.

Thomson-Houston Electric Light Co., City:

Gentlemen:—We have just tested your dynamo-machine—running it with one of our 10 indicated horse-power engines, and find it produces eight good-sized lights. We tested engine by brake immediately after the experiment, and the actual power equalled 7 6-10 horse-power. All other machines tried until now by us have given two lights less, for the same power consumed.

Yours truly,

SCHLEICHER, SCHUMM & CO.

The following is a copy of a letter lately received by Carroll & Powell, St. Louis, from the Captain of one of their steamboats on the Mississippi River, the light being the Thomson-Houston:

Messrs. Carroll & Powell.

Your letter of Oct. 23d to hand and noted. I should have complied ere this but was waiting to see the result of your light.

The Electric Light has been completed and has ever since given *entire satisfaction*, and can undoubtedly say it is the *best light* I ever saw, and other steamboat men recommend the same, and I can recommend it as being a No. 1 light.

(Signed)

D. A. CUBBERLY.

BANNER TOBACCO WORKS,

RICHMOND, VA., July 26th, 1884.

Dear Sir:—Replying to your enquiry as to how we have been pleased with the Electric Light, known as the "Thomson-Houston System" with which you supplied us, it gives us pleasure to state that we have found it in every way all that you claimed for it. The light given is bright and clear, and free from that flickering which renders the most lights of the kind unsatisfactory. Under this light the color of the wrappers is brought out as clear as in daylight, enabling us to work without intermission during cloudy weather or at night. Again, this light throws out but little heat. Our works are consequently much cooler and more comfortable than when gas is used, the volume of light being at the same time immensely greater. Besides the cost of the machine and expense of putting it in, we have been at no expense in running it, save for the "Carbon Points," which we have found not to exceed fifty cents a night for the ten lamps in operation. We have of course furnished our own power, but this we have found to be scarcely noticeable, as we but use the steam necessary for the proper working of our establishment. We would most cordially recommend your system to any one desirous of using "Electric Light."

We remain yours truly,

LAWRENCE LOTTIER.

[FROM THE IOWA STATE REGISTER, AUG. 8, 1883.]

The New Electric Light Company in Des Moines has produced a genuine sensation by the great excellence of its light, and by the steadiness and softness of the blaze. Every one who is acquainted with electric lighting, and who has seen the lights of this new company for the past two or three nights, pronounces it the best, steadiest, most illuminating and pleasant electric light they have ever seen. It is the Thomson-Hous-

ton patent, which is now fast superseding all other lights in New York and New England. It is soft and pleasant to the sight, burns without a flicker, and with none of the unpleasant hissing sound so inseparable from other lights. All who have seen these new lights are delighted with them, and orders are being made for them by business men beyond the present capacity of the company to furnish.

[FROM THE SACRAMENTO (CAL.) SUNDAY CAPITAL, MARCH 30, 1884.]

The Electric Light Companies had their lamps lighted last evening and the city presented a fine appearance, and nothing was talked of but Electric lights. The two systems used are the Brush and the Thomson-Houston, and it is very plain to be seen that the latter takes the lead in most every respect, and it was so decided by everybody we talked with on the subject.

Mr. S. H. Taylor, who came from the East to assist Messrs. Waterhouse and Coleman in getting the Thomson-Houston light in operation, stated to a CAPITAL reporter that it did not astonish him that their system had taken the lead, for it is the case in every place where it has come in competition with others, and we do not doubt it, for it certainly is by far the finest system we have ever seen.

At a private exhibition of the Thomson-Houston light on last Friday evening, when were present Gov. Stoneman, Secretary of State Thompson, Mayor Brown, the Directors of the Brush Company, and many prominent citizens, we were shown the merits of this light. We never supposed the electric light could reach such a perfection as is combined in this system. Among the most important features are:—

The lights are entirely free from the hissing noise which is so disagreeable in other systems.

They burn perfectly steady, and consequently make a pleasant light both for in-doors or out.

So perfect is the action of the machinery that in a circuit of twenty-five to thirty lights, lights may be removed or put out in rapid succession without affecting those that remain.

Each subscriber can have perfect control of his lamp, as it can be turned off or lighted at will.

The above are only a few of the merits that were shown us, but they are a sufficient guarantee that it has no equal on this coast.

We predict for the Thomson-Houston a grand rush, and doubt if the Pacific Electric Light and Motor Company will be able to supply the immediate demand.





